AMERICAN JOURNAL OF PHARMACY

and

THE SCIENCES SUPPORTING PUBLIC HEALTH

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AMERICAN JOURNAL OF PHARMACY

AND THE SCIENCES SUPPORTING PUBLIC HEALTH

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EDITORIALS

THERAPEUTIC CLASSIFICATION IN THE U. S. P. XIII

A NUMBER of suggestions have been made concerning the policy to be followed in the preparation of the text for the U. S. P. XIII. We shall not at this time enumerate all the suggestions or discuss them. One, however, seems to us to require a certain approach which may be overlooked. For this reason and with possible temerity we wish to outline our sentiments on the question.

It has been suggested that the Pharmacopœia adopt a therapeutic classification of drugs similar to that employed in *New and Non-Official Remedies,* i. e., anti-infectives grouped together, sedatives together, etc. The object of such a classification would be to facilitate the use of the Pharmacopœia by the physician in his practice. We do not object to the validity of this argument since the N. N. R. undoubtedly is ideally arranged for use by the physician and a similar arrangement in the U. S. P. would accomplish the same purpose. What we do feel has been overlooked is that the arrangement of text in the Pharmacopœia should be such that convenience to the greatest number of those using the book would be assured. To adopt a policy for the benefit of a minority which is definitely objectionable to the majority is not in line with the democratic organization that is presumed to govern the affairs of the U. S. P.

The medical profession does and should have the chief voice in the scope of the U. S. P. No one will argue against the right of the physicians themselves to decide on what drugs are of therapeutic value. The arrangement of the text, on the other hand, should follow that pattern best suited to the use of those who buy the book in the largest numbers. We are of the opinion that pharmacists and pharmaceutical chemists are better represented amongst the purchasers of the U. S. P. than the members of the medical profession and we furthermore cannot envision any appreciable chance of a change in this direction in the near future regardless of text arrangement. To the best of our knowledge no poll of pharmaceutical sentiment has been taken on

the advisability of therapeutic classification and yet this is the only way of assuring oneself that the wishes of the contributing majority were being followed. If our opinion were asked in such a poll we would state that for the pharmacist a therapeutic classification would cause considerable waste of time in finding a specific monograph. The alphabetical arrangement heretofore followed seems a much better system. A brief therapeutic outline as an addendum to the U. S. P. would be entirely acceptable but the monographs themselves certainly should not be so arranged.

The efforts to encourage physicians to use U. S. P. products is in itself commendable but there are many books ancillary to the Pharmacopœia that help in this direction. If we permit the U. S. P. to become too much a physician's handbook then its implementation in establishing standards for strength of basic drugs and accepted formulas will be weakened. The pharmacist as the chief financial support of the U. S. P. must not have his interests and wishes ignored on any Pharmacopœial question not solely the prerogative of medicine.

L. F. Tice.

PHYSICAL FITNESS AND PROFESSIONAL WORK

ONE of the many resolutions passed by the Convention of the American Pharmaceutical Association pledged the participation of organized Pharmacy in the work of the Joint Committee on Physical Fitness. This Committee was established by President Roosevelt in 1943 as a result of the findings of Selective Service pointing to the low standard of fitness found amongst American youths. We are in hearty agreement with the objectives of this Committee and the need of such planning on a national scale cannot be denied. There is, however, an aspect to this whole subject which is probably overlooked and that is that we the pharmacists, chemists and others engaged in professional work are probably less physically fit than the norm for our age group.

Men and women engaged in professional and scientific work are almost invariably led by the nature of their educational and vocational pursuits into a life of intense mental activity and application which little by little crowds out their time and desire for physical

exercise. The result is only too often an imbalance between mental and physical development with any number of resulting abnormalities both mental and physical. Whether we like it or not the human being is an animal and the laws of nature cannot be refuted or suspended by any effort on our part. Neither can we convincingly rationalize our desire not to believe in these laws by saying that they do not apply to us.

It is a well known fact that a man whose body is in good "trim" feels a drive and a pleasure in work which to the unfit is completely beyond comprehension. Many men who are in poor physical condition will argue that they are never sick, that their appetite is normal, how could they feel better? Ask any young man his feelings on the matter who has gone through the Navy "boot" training or the similar training given by the Army. He will tell you that, although the process was painful, he had afterwards an inner and outer glow of health that before he never knew.

It is difficult to describe this feeling inasmuch as it is both strong and yet intangible. Not only is the physical condition improved but the mental outlook becomes more optimistic and the individual acquires a sense of self-confidence so essential in both civilian life and the armed services.

The difficult thing about the whole situation is that those who need physical improvement will say and probably are at this moment saying "tommyrot"! Some few stimulated from their inertia will try some foolish exercises and when unused muscles object in painful harmony their good intentions will vanish. Others will resolve to attend next week's football game and let it go at that. It is only those who know the sense of well-being that exercise bestows who find lack of exercise intolerable. For all others the problem is to find some means to rouse them from physical inertia without resorting to the Army and Navy system of enforced and regimented exercise. This is not easy, for the individual will scarcely derive much pleasure from the program until he has participated in it for some time.

Pharmacists, chemists, physicians or others similarly engaged would do well to select some hobby involving exercise best suited for their age group and one from which they derive some degree of pleasure. By participating in this hobby exercise is obtained and improvement in bodily health is certain to follow. There is also a

mental relaxation that accompanies tennis, golf, hiking, boating, etc., which is very essential for one whose work requires close concentration and mental effort. Too often the man whose work consists of difficult and perplexing mental problems chooses cards, chess or some similar mental game as his evening's activity which is as ridiculous as the bus driver taking an automobile ride when off duty. The frequent observation by the laity that Professor Brown or Doctor Smith is slightly "off" mentally may not be so far wrong as many of us presume. It is simply a recognition of a disproportion which surely exists in many cases much as we dislike to admit it.

If we as pharmacists are to support the work of the Joint Committee on Physical Fitness it would seem logical for us as a group and as individuals to give more attention to our own physical condition and not place ourselves in the position of stating in essence, "Do as I say and not as I do."

It will be as difficult for the fat, flabby pharmacist to "sell" physical fitness as it has always been for the prematurely bald to sell hair tonic.

L. F. Tice.

ESSENTIAL AMINO ACID DISTRIBUTION IN A CASEIN HYDROLYSATE SUITABLE FOR PARENTERAL INJECTION *

By Richard J. Block and Diana Bolling

MADDEN *et al.* (1) mentioned that an acid hydrolyzed casein with added tryptophane afforded bare nitrogen equilibrium and produced virtually no plasma protein regeneration when given to hypoproteinemic dogs. These investigators further reported that the administration of the 10 essential amino acids (listed by Rose), with added glycine, maintained nitrogen balance and caused good plasma protein regeneration in the experimental hypoproteinemic dog. These findings prompted us to determine quantitatively the indispensable amino acid content of an amino acid preparation marketed for parenteral administration under the name of *Parenamine*. The label stated that it consists of an acid hydrolyzed casein with tryptophane added to the extent of one per cent of its total amino-acid content.

Arginine, histidine, and lysine were isolated according to a small scale modification of the Kossel-Kutscher method (2); tryptophane was determined by the Millon-Lugg procedure (2); phenylalanine was estimated by a modification of the Kapeller-Adler method (2); methionine by the McCarthy-Sullivan procedure (2); threonine was estimated by oxidation to acetaldehyde (2); leucine, isoleucine, and valine were determined by the microbiological methods of Shankman (3) and of McMahan and Snell (4).

It is evident from the data presented in the following table that all the essential amino acids are present in the casein hydrolysate in amounts that compare favorably with those of casein analyzed by the same general methods; and with the exception of tryptophane, which was the synthetic racemic mixture, all of the amino acids are present in the natural form. These analyses, coupled with Madden's (1) experiments, suggest that either the preparation studied by these investigators was a poor batch of material, deficient in tryptophane, or that the dog, unlike the rat (5), is unable to utilize *d*-tryptophane. Other

* From the Department of Physiology and Biochemistry, New York Medical College, Flower and Fifth Avenue Hospitals, New York, and Cooper Road, Scarsdale, New York.

experiments on differences in the metabolism of *l* (—) and *d* (+) tryptophane have been presented by Totter and Berg (6) in the mouse, Albanese and Frankston (7) in the human, and Reid, Lepkovsky, Bonner and Tatum (8) in pyridoxine-deficient rats.

TABLE I

Essential Amino Acid Content of a Casein Hydrolysate and of Casein

Amino Acid	Casein Hydrolysate [1] %	Casein [2] %
Arginine	3.8	4.1
Histidine	1.6	2.5
Lysine	8.2	7.5
Tryptophane	1.0	1.2
Phenylalanine	3.6	5.2
Methionine	3.6	3.5
Threonine	2.9	3.9
Leucine	10.6	12.1
Isoleucine	6.1	6.5
Valine	7.3	7.0

[1] Parenamine.
[2] Values for casein are taken from data in (2) and calculated to N = 16.0%. Commercial casein has a nitrogen value of about 13%.

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OPPORTUNITIES IN HOSPITAL PHARMACY

By Ivor Griffith, Ph. M., D. Sc.

WERE I asked this question, "What is the matter with Hospital Pharmacy?", I'd be inclined to give something of an evasive answer in words to this effect.

"If there is something wrong with Hospital Pharmacy, and where there is this something wrong with Hospital Pharmacy, I'd look for the trouble in the hospital pharmacist."

Now that is something of a roundabout answer. I have said elsewhere that I should like to have the privilege of appointing a well-remunerated and well-trained and lastingly enthusiastic "pharmacy conscious" pharmacist to every hospital in the United States. Within a decade of such an event, the complexion of Pharmacy, the service of Pharmacy, the appreciation of Pharmacy, in hospital circles and elsewhere, would improve a hundredfold. The well-trained, assiduously energetic and enterprising Hospital Pharmacist is one of the most valuable members of any hospital staff, and his good influence upon internes, nurses and staff physicians and surgeons may be made to diffuse far beyond the institutional precincts. And there are today scores of such worthwhile persons engaged in worthwhile Hospital Pharmacy practice; but I am also certain that there are a great many such who are unconscious of their responsibilities, their opportunities and of their real "ambassadorships" in Pharmacy.

There are some such who make no particular effort to do else than fulfill the minimal requirements of the position. There are still such co-called pharmacists cloying and clogging the drug departments of many otherwise worthwhile hospitals, and they constitute an internal and eternal disgrace to their profession and to the management that suffers their presence.

I make these statements at the outset of this little bit of writing to emphasize the fact that the up-and-doing hospital pharmacist has challenges that are unlimited in their scope and in responding to them intelligently as giving a service which brings lustre to the profession generally.

The enterprising hospital pharmacist should be a member of the major hospital staff. He should be good enough to command the

respect of his associates in the institution. He should be invited to attend the staff conferences, and to participate in them. He should be an important member of the nurses training school staff, and even more importantly, he should be the director, in his own way, of a kind of post-graduate instruction to the internes. And believe me, if any group really needs down-to-earth instruction in the fundamentals of practical pharmacology and pharmacy it is these aerated and overrated "fluffy" fellows, the recent omniscient graduates of medical schools, and whose useful deflation should be the particular delight and desideratum of the dictator of the drug room. And I know that these young men welcome such a practical contribution to their training.

Too often one finds in a hospital, internes whose training in prescription writing was mostly had from printed manuals, and nurses who insist that one-half of one-fortieth is one-twentieth. Thus, with every turn of classes, the pharmacist, if he is on the job, finds fallow fields and new challenges and new responsibilities.

While my experience in Hospital Pharmacy was had two decades ago, I recognize the vast progress made in many phases of hospital service, and there has come unquestionably an improvement in pharmaceutical personnel and pharmaceutical service. The American College of Surgeons, when it evaluates a hospital, has learned now to give at least a cursory examination of the pharmacy, but I can well remember how their official examiner sent to evaluate the little institution where I served spent tedious hours over the equipment in the laboratory, in the operating room, in the X-ray department, and elsewhere, but paid no attention whatever to the character of the drugs or of the pharmacist.

When one considers the importance of drugs as weapons in fighting disease, it is incredible that so little attention is paid to that branch of healing. Some years ago I was asked to visit and investigate a small Hospital Pharmacy which had been for years in the charge of a graduate nurse not trained in pharmacy. This is what I found.

On the stock shelves were two one-pound packages of hydrocyanic acid of ancient vintage, brown with cyanogen, and relatively useless as a remedial agent. Their fluid extract of ergot, purchased in gallon lots, was used at the rate of a pint a year. All of the tinctures were purchased in bulk, and the hospital paid real money for

this material, utterly disregarding the monetary savings which accrue from making tinctures from tax-free alcohol.

The greatest handiwork of the able surgeon and the careful internist may fall by the wayside unless the therapeutic agents are sufficiently and accurately prepared. Quite recently the advertising columns of a medical journal carried two paragraphs in their "Wanted" column, worded something like this: "Wanted—Nurse with experience in dispensing drugs," and "Laboratory Technician, who also knows drugs."

To turn such people loose in a pharmacy constitutes a menace to the welfare of the hospital's tenants, and that is nothing short of criminal. And so I return to my original premise, namely, that Hospital Pharmacy will mount to new elevations in service just so soon as there are placed in charge of Hospital Pharmacies men and women of sound training and of sterling worth.

In conclusion, may I note that in the communication to the American College of Surgeons, many years ago, I enclosed a tentative list of questions to aid their investigators in determining the value of the Hospital Pharmacy service, and also to help in elevating the standards of the profession in that important phase of its activities:

QUESTIONNAIRE

A. Outline of Pharmacy Staff, With Particular Reference to the Following Data:

Is the chief pharmacist a college graduate, and a registered pharmacist in the resident State?

Are the assistants State qualified?

What are the hours of service in the pharmacy?

What laboratory assistance can the pharmacy furnish? (Very frequently the pharmacist is well equipped to assist in important laboratory service for he may be a trained chemist or bacteriologist).

Who has direct charge of the narcotic supplies and are the narcotic records carefully kept?

Who has direct charge of the alcohol and alcoholic liquid supplies and are these records carefully kept?

Who is the purchasing agent for the pharmacy supplies? Are they economically and carefully purchased? Is quality or cheapness the basis of purchase? (Unfortunately, the con-

dition exists where an intimate knowledge of drug valuation is not possessed by the buyer, frequently the superintendent or medical director.)

Is the pharmacy self-supporting?

B. Special Questions:

Does the pharmacy manufacture tablets, ointments, pastes, galenicals, ampuls, etc.?

Has the pharmacy a system whereby antiquated and therefore inert preparations are regularly discarded?

Is it equipped to prepare the various intravenous medications, arsphenamine, neoarsphenamine, etc.?

Are the biological supplies properly refrigerated?

It is understood that this list is but tentative and open to a good deal of correction. But it is a step in the right direction and hospital pharmacy should not be conducted in the haphazard way which we know is the *modus operandi* of that important department in many small institutions, where engagement of a trained pharmacist is deemed unnecessary.

The Armed Forces of our country now claim the services of almost one-third of all the doctors in the United States. Altogether, there are 185,000 physicians, and there are about 52,000 in uniform.

PUBLIC RELATIONS FOR THE PHARMACIST VIA THE LOCAL PRESS

How the Pharmacist Can Use the Local Newspaper to Increase His Prestige in the Community and Raise Public Regard for His Profession

By Fred Eldean *

ONE of the major public relations objectives of the retail pharmacist today is the building and maintenance of increased public appreciation for the profession of pharmacy. To do this the pharmacist must strive continuously by every means at his command to make the public aware of the pharmacy's outstanding position as a community health center.

Well-planned, attractive and efficiently laid out stores built around the prescription department and emphasizing the pharmacy's close association with the medical profession; polite, attentive personnel; newspaper and direct mail advertising of a high ethical and professional quality—these are some of the public relations tools which come most immediately to mind whereby the pharmacist can raise the prestige of the profession of pharmacy in his community.

However, there is one other tool which is frequently overlooked and which deserves the serious consideration of every public relations-minded pharmacist—namely, the news columns of his local newspaper.

It has been said that the greatest source of public opinion is the newspaper—Will Rogers spoke for nearly everyone when he said, "I only know what I read in the papers"—and today it is truer and more important than ever, for the simple reason that the mechanism of news publicity has been stepped up. Air mail and improvements in telegraph, radio and telephone communications have cut down time. Advances in the art of printing, photography and the organization of agencies for news dissemination have focussed increased attention on the newspaper as a means of molding public opinion quickly and with far-reaching results.

* Public Relations Counsel, National Pharmacy Committee.

Thus there has come into being the art of creating publicity, or news, that will accomplish a definite and predetermined objective. This art, which is an important phase of public relations practice, can be easily learned and applied by the retail pharmacist to better his professional standing in the community and increase the public's respect and appreciation for the profession of pharmacy as a whole.

For example, suppose John Smith, a retail pharmacist, attends a convention of his state association and among the topics discussed are the new practices and products in drug therapy which have been developed during the war, the benefits of which will be made available to the public in the postwar period. There you have the basis of an important news story, one in which the pharmacist and the entire profession of pharmacy figure prominently and with great credit. Moreover, it is a story which every newspaper editor will welcome because, being about public health, it concerns every one of his readers and because it concerns a prominent citizen and member of one of the most important professions of the community, the pharmacist.

Think of the opportunities such a news story offers the pharmacist to attract favorable public attention to himself and to his profession! It will rate at least a three-quarters column story under a two-column headline:

NEW MIRACLE DRUGS TO PLAY VITAL
ROLE IN COMMUNITY HEALTH

Local Druggist Describes
Development in Drug Therapy
To Be Made Available After War

Penicillin and the new sulfa drugs will make community health history after the war just as they have made military history in preventing sickness and disease among the armed services, according to John Smith, proprietor of Smith's Pharmacy, 119 South Main Street, who returned today from attending a convention of the ———— State Pharmaceutical Association.

Smith said discussion of the new drugs formed the major topic at the convention, etc., etc., etc.

If Smith is alert to further news publicity opportunities which his trip to the convention and the subsequent news story created, he will arrange for an exhibit demonstrating one of the new therapeutic products, such as penicillin, for example—this can be arranged with the cooperation of a manufacturer of the product—and announce that he will deliver talks on the subject at the local high school and before local civic groups. The talks will be subjects for additional news stories in the local press, and the talks themselves an invaluable means for increasing his prestige and that of his profession. In the minds of the people of the community a fixed association will be formed connecting him, his pharmacy, his profession, and one of the greatest advances in drug therapy in recent times.

Furthermore, at the conclusion of the series of talks, in order to exhaust every possible public relations opportunity, Smith could assemble all of the news clippings which his convention trip and lecture series earned and, together with a brief transcript of the talk itself, prepare a simple, inexpensive four-page direct mail folder which could be sent to a selected list of customers or given away in the store. On page 1 of the folder would be reproduced the first news clipping, the one that reported his trip to the convention and what he heard and saw there. Alongside it would appear Smith's picture and underneath the following typewritten caption:

HERE IS MY OWN PERSONAL REPORT TO THE PEOPLE OF THIS COMMUNITY ON THE IMPORTANT ROLE OF DRUG THERAPY IN COMMUNITY HEALTH AFTER THE WAR

By John Smith

Then would follow a report of what Smith heard and saw at the convention and his own observations, interpretations, and comments—in fact, the substance of his remarks delivered before the local high school and the civic groups mentioned. The transcript of the talk should not be such a task to put together since it has already been presented in public a number of times. It would make it much easier, of course, if it could be arranged to have a stenotypist take down the talk at one of the civic meetings. The secretary will probably want a copy for his bulletin anyway.

Smith's talk would carry over to pages 2 and 3 of the folder and page 4 would contain reproductions of the various newspaper clippings reporting its delivery before various civic groups. The cost of preparing such a folder should be small. If the Varityper, a kind of typewriter equipped with attractive fonts of type, is used to prepare Smith's talk for reproduction and if the whole folder is reproduced by the offset process, the total cost should not come to more than fifteen dollars a thousand. A local printer will be glad to take the talk and news clippings and lay them out in an attractive form for reproduction.

Do you now begin to see the value of the local newspaper as a public relations tool?

It is a springboard by which the pharmacist can win favorable public attention for himself and his profession. It lends an air of crisp freshness, newsworthiness, and importance to his comings and goings. It marks him as an up-and-coming man of public affairs. It identifies him prominently with the leaders and the progressive elements in his profession. It heightens the respect of the community for him and his profession. And by tying together newspaper publicity and advertising, as in the direct mail folder we have just described, it crowns his public relations efforts with an authenticity, sincerity, and persuasiveness which cannot be obtained by any other means.

Of course, every convention won't have the dramatic import of the mythical example we have described. Nevertheless, if on his return from each convention the local pharmacist will go to his local paper and talk over with the editor what has taken place, we are sure a good news story will result—even if it's only a news report of the fact that Smith has been out of town. And in seven cases out of ten if relations between the editor and the pharmacist are friendly enough, and the pharmacist does enough talking about his profession, what it is accomplishing, etc., we'll wager he'll rate a feature story.

Every editor is on the lookout for local color stories, news of scientific progress, features which reflect credit on the community and distinguish it as the home of outstanding professional business men. Your local editor will prove to be your biggest, best and most articulate booster if you will but let him. Get to know him and make him your good friend.

THE MARRIAGE OF SCIENCE TO GOVERNMENT

By T. Swann Harding

THE American public, in the integument of Congress assembled, is considering a bill. This provides for making the salaries of Federal Government employees subject to garnishment just as are the salaries of people employed outside Government. The proposition is certainly sound in principle so Congress decides to vote favorably. Surely no one would hold that the employees of Federal Government should have special privilege in the matter of evading debts.

But, in the agreement on soundness of principle, there has been a tendency to overlook the huge volume of red tape and the involved bureaucratic procedure passage of the legislation would promote. There would have to be a special unit in each Government agency merely to handle this one matter, to receive and record processes, to conduct a great volume of correspondence, and to keep an account of all attachments and garnishments.

Persons would have to be employed also to check each name on each payroll each payday to be absolutely certain that no outstanding attachment or garnishment existed for the name of the employee. Since more employees are scattered in the field than work in Washington, this would mean that experts must gain familiarity with the garnishment law of each of the States. The difficulties of administration would be enormous.

Few members of Congress are administrative experts. Few if any Congressional committees have expert advisers on anything. In time some of the very persons who voted for such a bill would grow to hate the expense involved in its enforcement and would stand to denounce the encroaching bureaucracy it created.

Certainly those who follow the present legislators in the quick turnover at the Capitol can scarcely be expected necessarily to favor the results of this or any other bill and will almost certainly demand cuts in expenditures and units predicated on their own idea of how things should be. But Congress has a job on its hands trying to understand technical matters.

The other day the writer of these lines, who was for a considerable period of time a research chemist, visited a chemical lab-

oratory which formed one small unit in a single huge department. His object was to talk to the scientists and find out what was going on and to report these findings. But he was persistently cascaded with technical nomenclature and found it extremely difficult to work his way through this fog to simple factual statements.

However, quite suddenly, he ran upon a technical man in a difficult and complicated field who was an interpreter, who realized that the writer had forgotten more chemistry than he ever knew, and who replied to his lay questions with enlightening lay answers. It developed that this man also could interpret his own science to other scientists in terms they could comprehend and that he could interpret one scientist in terms another could grasp.

He was, therefore, a very valuable man. For the day of the specialist has not only dawned; it is at bright noontide. Not only is it quite impossible for a botanist speaking his own language to be understood by a physicist who speaks his, and vice versa—it is also impossible for a chemist in one specialized field to understand a chemist in a related but different specialized field, so long as both speak their own technical language.

In the same manner it is futile to imagine that a lawyer, which is what a legislator generally is, can fully comprehend difficult problems in science, administration and finance presented to him in the technical languages of these specialties. Yet Congress, essentially without technical advisers, attempts to understand complicated problems in widely separated but highly specialized fields.

For it is up to Congressional committees and then to the Congress as a whole to grasp and decide upon the justice of appropriations for such projects as:

The use of endocrines to increase egg production; the role of Johne's disease, coccidiosis, and worm parasites in cattle production; the production of riboflavin from milk byproducts; spot treatment with soil fumigants for the control of root-knot nematode on melons; the use of mass releases of *Macrocentrus ancylivorus* to control oriental fruit moth injury; and the conversion of lactose into methyl acrylate to be polymerized with butadiene for the production of synthetic rubber.

How would you like to decide upon the wisdom of these projects and the expenditures involved? Members of Congress are often accused of asking silly and irrelevant questions when the continuance

of such projects is proposed. How can they ask any other kind of questions than those which represent desperate attempts to piece together their largely non-specialized knowledge and the highly technical and intensely specialized scientific knowledge of those who explain the projects to them often in the most esoteric language?

In its efforts Congress is pushed around by what are called lobbies. These lobbies represent capital, labor, industry, agriculture and other special interests. The lobby of the public is conspicuous by its absence. No one represents the ordinary run of citizens except a few harried, frustrated individuals whose half-hysterical desperation gets them catalogued as cranks. Scientists, who have vast knowledge, speak a language legislators do not understand—and scientists often do not either!

The great need for what has been called an Institute of Science appears here. This agency would be an over-all organization, a sort of strategically located general staff of scientists. It would be a clearing house for all Government scientific projects and knowledge. It would in no sense be dictatorial or represent an effort at regimentation. But it would seek to channelize and regularize all the far-flung scientific work that must be carried on by modern government.

It would evaluate this work and interpret it in terms understood by legislators and other laymen who need to have it made plain to them in ordinary language. It would supply special technical staffs of scientific specialists to advise any branch of Government—executive, legislative or judicial—that needed such services. It would supervise and plan types of social and economic experimentation that we now tend to undertake at haphazard if at all.

When we citizens dislike something Congress has done we usually indulge in denunciations of Congress, or else of the expenditures and bureaucratic institutions that have had to be created in response to actions taken by Congress. Through pressure groups we slowly insist, for example, that Congress create all the far-flung establishments of a great institution like the Department of Agriculture which, under wartime conditions, rather naturally takes over in the food field.

Then if the institution does not operate exactly to suit us we, and often Congress as well, denounce this, our own creation, without any very clear ideas about its replacement. We have no clear ideas largely because we lack the experimental approach when it comes to

such matters, hence verifiable knowledge about them does not exist. The only effective way in which we can make our wishes felt by Congress is almost too complicated and hopeless for us to undertake.

It would require us to quit talking about our rights as citizens for a while and to cease aimless criticism, while assuming our duties and responsibilities. We should have to acquire understanding of what goes on. We should have to organize, vote in the primaries, see that the right Congressmen are elected, and then have our own powerful lobby in Washington to prevent our representatives from forgetting us when subjected to the pressure of other powerful lobbies.

The fatal defect here is, however, that we have little or no scientific knowledge about how, for instance, banks should be run, how the monetary system should be set up, how government should serve industry or agriculture or public health. The institutions we have usually do valuable and often extremely effective work, but they have largely been improvised.

Look into the history of agriculture again. The Department of Agriculture came into existence in Lincoln's Administration almost by inadvertence. A few Commissioners of Patents had been much interested in agriculture and they had been yammering away for a quarter of a century to the effect that the Federal government should set up an agency to serve agriculture. Most of them were gentlemen farmers and gentlemen farmers in general, the fellows who belonged to the agricultural societies, attended the agricultural museums and fairs, and subscribed to the existing agricultural journals, backed them up.

In other words there was a lobby. Indeed it crystallized into a sort of United States agricultural society which became a spearhead and finally induced the Secretary of the Interior to include a plea for an agricultural bureau in his annual report. Lincoln, who was in no sense a farmer or even an agrarian philosopher, reproduced the plea almost verbatim in his message to Congress. Congress passed the act required because the southern delegation had vanished and there was where the opposition concentrated.

But no one sat down and thought out a plan for this new Department. Its status was anomalous, after futile debate decided its head should not have Cabinet status but should be a mere commissioner. No New Deal was proposed and no farsighted preparations for the future were made. As a result the Department just shambled along

its own way for years, often headed by political appointees of quite other interests. Only gradually and by accretion of Congressional statutes did the Department become what it is today.

One reason such planning could not be undertaken was, and still is, that we are lax in social experimentation. It should be possible to run small-scale experiments in social science and economics to see how things work, just as research laboratories run first laboratory and then pilot-plant-scale experiments.

For instance take the sort of thing that happened when the subsistence homesteads were set up. The idea sprouted in the mind of M. L. Wilson, not Rexford Tugwell to whom it is so often erroneously attributed. A lot of the homesteads failed miserably. The entire project was expensive if you want to look at it in a profit-and-loss way—which would be very foolish. For this was scientific experimentation, like a great many other things carried on by Federal Government in recent years, and the value of experiments arises from what is found out, not from the success of a particular experiment *per se.*

If you want to know what was found out in this instance get "A Place On Earth," by Russell Lord and Paul H. Johnstone, from the United States Department of Agriculture. It is a critical appraisal of subsistence homesteads. It tells in simple, highly readable language what was found out. By reading it anyone who wanted to set up subsistence homesteads in the future could discover many things that should not be done and many that must be done. The thing would not be so expensive next time.

In the same way through the Institute of Science (if we had one) experiments could be run on the best method of devising income tax blanks and of collecting income taxes, of running banks and post offices, and of providing aid to specialized groups of citizens who need protection or assistance in any of a wide variety of ways. Government housing projects, food distribution problems, industrial and commercial standards, and a thousand and one things concerned with our daily lives could be subjected to serious planned experimentation.

To be sure, a Green Belt housing project may have lost ten million dollars or twenty million. What of it, if thereby you have found out how not to plan a Green Belt in the future? What of it, if you have discovered how it should be planned, what kind of people should live in it, what income level they should have for homes of

particular prices, what social or community organization should be undertaken and, above all, what should not?

We can experiment in group medicine plans, in crop insurance—an experiment right now being permitted to lapse—in matters concerned with matrimony, divorce and the care of the hopeless children who spring from certain weird, feckless and ghastly marriages. We could experiment with individual schools and entire systems of education, with the provision of specific monetary or other aids to farmers, with the control of frauds or public utilities or business enterprise. We could even experiment with forms of enterprise, deciding thereby which should be governmental and which in private hands.

Our Institute of Science would gradually decode and reinterpret the findings in terms that our legislators and we ourselves could understand. It would maintain codified bodies of information on all topics of importance. Then we as citizens could assume our responsibilities in full knowledge and our legislative bodies would have expert advice and reservoirs of scientific knowledge for their guidance. The place of the expert in Government would be regularized with full preservation of democratic process and institutions.

To expect Congress with haphazard advice to act wisely on rural rehabilitation, lend-lease, farm bankruptcy, cotton production, reclamation, the price of hogs, price control in general, the management of property, subsidies, taxation, synthetic fuels, petroleum reserves, the dairy industry's problems, the tariff, property requisition, personnel economy, and so on—is just too much. Some means must be devised for putting the insight and knowledge of the expert to work on such matters without necessarily giving scientists ultimate political power.

Such a method is outlined here. We shall have eventually to evolve some such system or our democracy will simply fall to pieces under the impacts of special interests and scientific specialization. Now is the time to plan something better before post-war crises catch us unprepared. Thus we shall restrict the field of opinion and authority, and expand that in which verifiable scientific knowledge guides and directs our actions.

ECONOMIC REALITIES

HOW TO AVOID A POST-WAR DEPRESSION

By Karl Scholz, Ph. D.*

CAN we avoid a postwar depression? This question is frequently asked by those who fear that when once the Federal government stops buying war goods, the opportunities for full employment of our productive resources will decline rapidly and precipitate a major depression.

Before an objective answer to this question can be attempted, it is important that we understand what is meant by "postwar" and "depression." Any time after the conclusion of the war is obviously postwar. What seems to be implied in the question is the period within a year or two after the war on the assumption that with the cessation or curtailment of war goods production, a depression will be precipitated. Moreover, a depression is commonly associated in the minds of people with declining prices and large scale involuntary idleness.

We may therefore rephrase the question thus: "Can we avoid large scale unemployment and a collapse of prices in the years immediately following the successful termination of hostilities?"

The theory is widely accepted by economists that business depressions grow out of the conditions that have developed in a preceding period of business prosperity. In applying this theory we should distinguish clearly between an ordinary business boom and a war boom. A business boom such as we had prior to the stock market collapse in October, 1929, is characterized by accumulating inventories of consumer's goods, which are held in anticipation of advancing prices. Private commercial debts expand, bank deposits increase and the production of civilian goods reaches high levels. When a deficiency of consumer buying power makes itself felt, because in many lines prices have advanced more rapidly than production costs, some merchants begin to slash prices, in order to induce buying. If this practice becomes cumulative, and prices begin to decline significantly, buyers are apt to hold on to their money, in anticipation of still lower prices. The inducement to continue pro-

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duction in the face of unsaleable goods at prices sufficient to cover costs is obviously diminished. Curtailed production increases unemployment, diminishes payrolls and consumers hold on to their limited spending power, preparing in a rainy day for a still rainier day. Thus a genuine business depression is generated, because consumers restrict buying, while business concerns liquidate inventories and curtail output in anticipation of still lower prices.

The familiar characteristics of a period of business prosperity which ordinarily generate the conditions that lead to a depression are not altogether typical of a war boom. War prosperity is more in the nature of a money prosperity than a goods prosperity, even though considerable surpluses of many types of goods have been accumulated by the government during the war. The actual saleable supply of these goods through ordinary commercial channels in the United States has been estimated at around eight billion dollars, while variously processed materials in the hands of war contractors may have a civilian market value of two to three billion dollars. At the same time, far more billions of dollars of spending power have been accumulating in the pocketbooks and checking accounts of both consumers and business concerns. Moreover, savings bonds, convertible into cash on short notice, have likewise expanded rapidly with every new war loan.

A few facts may be cited in support of these general observations. Total money in circulation, which at the end of 1940 stood at 8.7 billion dollars amounted to 23.3 billion dollars in August, 1944. This represented an increase in monetary circulation of 168 per cent in less than four years. Commercial bank demand deposits, or checking accounts, rose from thirty-one billion dollars in June, 1940, to fifty-nine billion dollars in June, 1944, or 90 per cent. Series E savings bonds, redeemable in cash on demand, which were in the hands of the people in the fall of 1944, had a total redemption value of nearly sixteen billion dollars.

A large part of the huge national debt, held by commercial banks, matures in less than five years, and will require more cash, when repaid by the government, unless it is converted into long term debt, in order to postpone the day of reckoning. All these facts seem to bear out the observation that our war boom is primarily a money and credit boom. But credit is debt, looked at from the other side of the fence.

The billions of accumulated funds represent postponed monetary demand, which, if wisely used and conservatively spent, will go a long way toward preventing a postwar depression. However, if unwisely used by spending them too rapidly, they are likely to first generate a postwar boom rather than a depression. Such a boom would be a typical peacetime business boom, induced by the war boom. Allowed to run its course, with swelling inventories, rapidly rising prices and high levels of production, it would undoubtedly end in a major depression within a few years after the war.

If, therefore, we would seek to avoid such a depression, as an aftermath of a postwar business boom, it is necessary that we apply appropriate preventives before it is too late. What is the nature of the measures that may be adopted to minimize the dangers of a major postwar business collapse with mass unemployment? The following measures deserve particular consideration:

1. Speedy termination of war contracts with a view to expediting reconversion of industry to peacetime production. Continued cooperation between government and private enterprise with a view to achieving this objective will go a long way toward diminishing the dangers of postwar depression.

2. A not too rapid, but gradual, relinquishing of government wartime controls over production and prices, with a view to preventing undue price rises of goods short in supply after the war. The orderly discontinuance of priorities, and meanwhile effective allocation of basic materials, should be carried out with a view to expanding peacetime production of civilian goods, when shortages are particularly apparent, as reflected in market supply relative to demand. Rationing should be abolished only gradually when it becomes apparent that, in general, supply has expanded sufficiently to meet demand at prevailing prices.

3. Saleable surplus goods accumulated by the government during the war should be disposed of with a view, not to depressing market prices, but as far as possible to helping stabilize prices. Governmental counter-speculation is an effective means of curbing undue private speculation after the war.

4. Wage adjustments should be related primarily to labor productivity or efficiency, rather than to a cost of living index, after adequate legal provision has been made to assure minimum living wage payments. Any postwar attempt to maintain wartime wage

rates in many fields of war goods production will only help to accentuate postwar unemployment and thus serve to bring on the postwar depression, which we are seeking to avoid. Enlightened self-interest of both labor and management should strive to relate postwar wages wherever possible to labor productivity and recognize the merits of wage incentives.

5. Taxes should, as far as feasible, be made direct taxes, rather than hidden taxes, and levied according to the well recognized principle of ability to pay. Double taxation of the same source of income by the Federal government should be minimized. It would therefore appear to be a step in the right direction to levy corporation net profit taxes against individual stockholders, according to the rate of earnings on their stockholdings, rather than on the dividends actually received, and repeal various corporation net profits taxes.

6. The demand for American surplus products will be particularly pronounced in devastated and war-torn areas. An abundant outlet for considerable employment of our productive resources will exist after the war in our export trade. But unless we want to repeat the mistakes of the past, we should focus more of our thinking on expanding our imports, after economic order has been restored abroad. The alternative is again to invite defaults on debt payment, recrimination and eventually new international economic warfare, culminating in open hostility.

7. Lastly we should recognize the need for a well planned and expanding program of useful public works, designed to augment private employment, whenever the margin of involuntary idleness exceeds what has been called frictional unemployment, which normally represents perhaps three per cent of our labor force at any given time. In any dynamic society a certain labor reserve is necessary, to take advantage of new industrial developments, and to open up new productive opportunities.

These are among the essential requirements for an orderly readjustment of our economy to a peacetime basis, if we would prevent a postwar boom, culminating in a major depression. Time alone will tell whether we have the necessary courage and vision to make these adjustments, and in so doing, avoid a postwar depression.

SELECTED ABSTRACTS

Anti-Infective Agents of Biological Origin. W. P. Kennedy. *Pharm. J. 99,* 78 (1944). The author briefly reviews the data on thirty antibiotic agents reported by various observers. In tabular form he enumerates for each such agent the organism which produces it, its principal actions against bacteria, its chemical constitution or empirical formula (in several instances this is lacking), a comment on its toxicity and/or thermostability, and a reference to the literature. The substances listed are those produced by (1) bacteria, (2) *Actinomyces,* (3) *Penicilla* and (4) *Aspergilli.*

The author prefers the term "anti-infective agent" to that of "antibiotic agent" because of a lack of accuracy in the latter in describing the main effects of the substances in question, i. e., bacteriostatic or bactericidal.

Certain potentially important substances, concerning which little is known, are not included in the tabular material, though they are mentioned in the introductory remarks.

Although the lower forms of life have received emphasis as the sources of anti-infective agents, it has been reported by Osborn that the examination of a series of 2,300 higher plant species revealed in 63 genera the occurrence of substances which inhibited the growth of *Staphylococcus aureus* or *Escherichia coli* or both. The *Ranunculaceae* yielded the most potent extracts. From animal sources may be derived (1) lysozyme, an enzyme present in many tissues, which is lytic to many bacteria; (2) lactenin, from the albumin fraction of milk, an agent active against streptococci; and (3) certain protamines and histones which have anti-bacterial properties.

Penicillin Filtrate in General Practice. R. A. F. Creet and K. E. White. *Pharm. J. 99,* 124 (1944). The authors report the successful treatment of fifteen out of seventeen varied cases seen in general practice by the untreated filtrate of *Penicillium notatum* cul-

tures. The purpose of the investigation was to study the possibility of the production of such filtrates in a modern retail pharmacy.

Dried spores of *P. notatum* were grown on the usual modification of Czapek-Dox medium. Tap water, boiled and filtered through sintered glass, was used because of the dissolved mineral salts it contains. From five to ten liters of the medium were prepared in one batch and placed in the culture flasks to a depth of 2.5 cm.; these were then plugged and sterilized in the autoclave at 116° C. for thirty minutes. Each batch of ten to twenty flasks was cooled, and on the following day each flask was heavily inoculated under aseptic conditions with the spores of *P. notatum*. The flasks were then incubated for fourteen days at a temperature of 24° C.

At the end of this time the filtrate was separated from the pellicle of mold, and 0.5 per cent Liq. Formaldehyd. was added. The liquid was then passed through a Seitz filter into a sterile flask and transferred to sterile containers. Samples were assayed for penicillin content by observing their activity upon the Oxford strain of *Staphylococcus aureus* of known sensitivity to penicillin. Four different batches of filtrate assayed 4, 16, 10 and 15 Oxford Florey Units, respectively, per mil.

For clinical study physicians were supplied with the filtrate as such or in the form of a cream prepared with Lanette wax SX; the latter represented a W/O emulsion. In making this emulsion the temperature of the filtrate was kept as low as possible to avoid deterioration.

Among the conditions treated were several carbuncles, a bilateral contusion involving both thumbs, varicose ulcers, eczema, impetigo of the scalp, and other miscellaneous infections.

Some of the patients complained of a stinging sensation following application of the filtrate or cream. At the present time the addition of 2 per cent of procaine hydrochloride to the filtrate is being investigated, although this has not as yet received clinical trial. It was found that such a preparation lost 6.5 Oxford Florey Units per mil at the end of seven days.

English pharmacists who desire to prepare penicillin filtrates must guarantee that they will comply with the following requirements: (1) full bacteriological control must be maintained; (2) the necessary apparatus must be available; and (3) the filtrate is to be distributed free of charge.

Treatment of Cerebrospinal Fever with Penicillin: A Preliminary Report. D. H. Rosenberg and P. A. Arling. *U. S. Naval Med. Bull. 43,* 281 (1944). Thirty out of thirty-one cases of cerebrospinal fever were treated successfully by the intrathecal and parenteral administration of penicillin. The single fatal case was in a moribund state at the time of admission.

If cloudy spinal fluid was obtained by the initial diagnostic lumbar puncture, the spinal canal was drained and 10,000 Oxford units of sodium penicillin, dissolved in 10 cc. of isotonic saline solution, was introduced into the subarachnoid space. A few of the earlier patients received 15,000 units, but this dosage was abandoned because of increased symptoms and signs of meningeal irritation. Further injections were performed at twelve or twenty-four-hour intervals, usually the latter.

The drug was also administered either by the continuous intravenous drip method at the rate of 5,000 Oxford units per hour or intramuscularly in a dose of 15,000 units every three hours, the latter dosage being diminished when improvement was noted. The total dosage for each case varied widely in this series of cases; although the majority of patients recovered following the intrathecal injection of 10,000 to 20,000 Oxford units, those having the more severe forms of meningitis required up to 250,000 units.

Fluids were administered at the rate of 3,000 cc. daily as added treatment. When these were given intravenously the penicillin was added directly to a 5 per cent dextrose solution in a concentration of twenty-five to forty units per cc. Oxygen therapy was given to patients who were cyanotic on admission.

Two patients developed a localized thrombophlebitis of minor significance at the site of the continuous intravenous injection. Those patients who received penicillin intrathecally every twelve hours, and some who received 15,000 unit doses by the same route, experienced more severe and persistent headache, greater prolongation of fever, and slower subsiding of signs of meningitis. No other local or toxic effects were noted.

In the thirty successful cases improvement was noted soon after penicillin therapy was instituted. The temperature usually dropped abruptly, although a low-grade fever persisted for several days in several patients. The convalescence of a number of the patients was prolonged by the presence of complications such as polyarthritis, epididymitis, orchitis, and pericarditis, the course of which was not

altered by penicillin therapy. In the uncomplicated cases the pulse rate soon returned to normal. The spinal fluid returned to normal in from four to seven days in the majority of cases.

Protection of Ether Against Peroxide Formation. E. Boehm and R. Williams. *Pharm J. 99,* 79 (1944). The samples of anesthetic ether used in this study conformed to B. P. tests and were supplied by three manufacturers. Each series of experiments included samples containing different antioxidants such as pyrogallol, hydroquinone and propyl gallate in various concentrations. In addition, a control sample containing no antioxidant was examined in each series.

The samples, which were stored in half-filled, glass-stoppered, colorless bottles, were exposed to different conditions of light. At intervals they were tested for the presence of peroxides by the following tests: (1) the liberation of iodine from potassium iodide (B. P. 1932); (2) reaction with vanadium-sulfuric acid (D. A. B. VI); (3) reaction with phenolphthalein reagent (Ph. Helv. V); (4) reaction with basic titanium sulfate.

In direct light, for a given concentration, pyrogallol exhibited the greatest power as an inhibitor; the activities of propyl gallate, butyl gallate and hydroquinone were nearly the same. In diffused daylight samples containing 0.0002 per cent of propyl gallate contained no peroxide even after 131 days, though the controls developed peroxides to a perceptible extent in about fourteen days. Samples containing 0.005 per cent of the antioxidants tested in this study gave strongly positive aldehyde reactions with Nessler's reagent. Ethers containing 0.002 per cent of propyl gallate gave no color or turbidity with this reagent, and if they were not exposed to bright sunlight the development of peroxides was prevented for a period at least eight times as long as that noted for an ether containing no inhibitor; in addition, the protected ether conformed to B. P. standards for purity.

In order to prevent peroxide formation in a sample exposed to bright sunlight, a higher concentration of propyl gallate is required. In such samples small amounts of acetaldehyde and acetone were detected by the following tests: for the former, sodium nitroprusside,

piperidine and glacial acetic acid; for the latter, either (a) hydroxylamine hydrochloride and bleaching powder or (b) sodium hydroxide, sodium nitroprusside and dilute acetic acid.

Of the antioxidants tested, propyl gallate was found to be the most suitable for the stabilization of ether, especially anesthetic ether.

Sulfonamides in Cerebrospinal Fever. (Editor.) *Pharm. J. 99,* 108 (1944). A report to the Scientific Advisory Committee analyzed the records of 2,223 cases of cerebrospinal fever which occurred in Scotland between 1936 and 1941 as to the treatment given, whether none, serum alone, sulfanilamide, sulfapyridine, sulfathiazole, other sulfonamides, or a sulfonamide in conjunction with serum or antitoxin. The fatality rate for all ages was reduced to 16.7 per cent through the use of sulfonamides. A comparison of the results achieved through the administration of the three sulfonamides named above failed to indicate that any one of them possessed decided advantages over the others in this disease. The maximal rates of mortality in cerebrospinal fever were found in patients whose age was either under two years or over thirty-five years.

Between 70 and 80 per cent of the cases treated with sulfonamides were clinically cured within four weeks. Best results were obtained through the early administration of the drug. No conclusions could be drawn as to the optimum dosage to be employed, but a high dosage level appeared to be more beneficial than a low.

The Present Status of Intravenous Urography. W. E. Hatch. *Clin. Med. 51,* 235 (1944). Intravenous urography possesses an advantage over the retrograde method in that it provides a simultaneous test for kidney function, as well as being more convenient. The urea "clearance test," which refers to the determination of the amount of urea excreted by the kidneys in a certain period of time, is generally used as a standard in most studies with various substances.

According to the method of Findley, Edwards and others, the dye is injected as for an intravenous pyelogram and may be done in conjunction with this X-ray study. All urine voided during the next thirty minutes is collected, and the amount of iodine appearing in it

under standard conditions is determined. In normal subjects 45 per cent of the injected dose should be excreted within the thirty minute period; any reduction in the rate of iodine excretion is approximately proportional to a variation in urea clearance.

Indications for intravenous urography are as follows: (1) examination of children and the aged; (2) study of the ureter after bowel implantation; (3) study of the ureter and kidney in carcinoma of the bladder which prevents ureteral catheterization; (4) conditions such as obstructions or stricture which mechanically prevent the insertion of the cystoscope; (5) determination of the condition of the ureters following certain abdominal operations; (6) test for renal function; (7) following severe accidents in which there may have been renal, ureteral, or bladder damage; (8) X-ray study of the bladder; (9) in pregnancy, where the use of excretory urography is limited; here, however, the danger of exposing the fetus to the X-ray must be kept in mind.

Contraindications to intravenous urography include (1) marked renal insufficiency; (2) marked cardiovascular disease, such as coronary disease, advanced myocarditis, or decompensation; (3) decided impairment of hepatic function; (4) active tuberculosis; (5) hyperthryroidism; (6) iodine idiosyncrasy; and (7) hyperpyrexia.

Intravenous injection is occasionally followed by a feeling of warmth, dryness of the throat and mouth, and flushing, though more serious reactions such as choking, palpitation, nausea, tachycardia, etc., have been noted. Patients may be tested for sensitivity either by placing a few cc. of the drug on the tongue or by the intradermal injection of 0.05 cc.; in the latter case the appearance of a wheal larger than 15 mm. denotes sensitivity.

Retrograde urography is indicated for (1) examination of the bladder for disease; (2) determination of kidney function; (3) separate collection of urine from the kidneys for microscopic study; (4) patients with a contraindication for intravenous pyelography; and (5) pelvic lavage, dilatation of the ureters, or kidney drainage by means of a ureteral catheter.

The retrograde technic is contraindicated in (1) conditions in which trauma or infection might result; (2) children and the aged; (3) the determination merely of the existence of a kidney or its relation to other organs; and (4) post-operative examination following hysterectomy, ureter-intestinal implantation, etc.

Palisade Ratio Values of Atropa Belladonna and Acuminata. E. George. *Pharm. J. 99, 79* (1944). The palisade ratio for *Atropa belladonna* was determined by the examination of six samples of leaves which represented five growth seasons and five localities. The mean of 320 readings was six, with a standard deviation of 1.47; from this data it is calculated that the mean of twenty readings should fall between five and seven.

The palisade ratio for *Atropa acuminata,* determined on two leaves, was found to have a mean value of 3.5 and a standard deviation of 0.66. The mean of twenty readings should fall between three and four.

Each of two commercial samples imported as Indian leaf was found to consist of a mixture of at least two types of leaves. One type possessed straight walled upper epidermal cells and had a low palisade ratio, which is consistent with *A. acuminata;* the other type possessed sinuous walls and had much higher palisade ratio readings with several widely separated mean values. Inasmuch as other characteristics of these fragments were consistent with *A. belladonna,* it is believed that the commercial Indian leaf contains a variety of *A. belladonna* in which some of the leaves exhibit a higher palisade ratio than that usually found in the English leaf.

During the year 1943 the National Foundation for Infantile Paralysis allocated more than $1,600,000 for research on poliomyelitis. The grants to universities and hospitals were concerned with three phases of infantile paralysis work,—virus research, after-effects of the disease, and education.

SOLID EXTRACTS

Fibrin foam derived from certain fractions of blood plasma is receiving an enthusiastic endorsement from neurosurgeons. It is used to check bleeding in those areas of the brain and spinal cord where a blood clot would be serious. The great advantage of fibrin foam is that it not only effectively arrests bleeding but it produces no tissue reaction and it is believed to prevent the adherence of the nerve root to adjacent tissues and prevent scar tissue formation. Many serious head wounds received in combat are being treated using this drug developed as a result of the war.

AJP

The desire by the Navy of having a more compact product than blood plasma for use in shock, etc., led to the development of serum albumen. This, however, left a very large amount of other plasma fractions for experimental use. The result has been many new products such as fibrin foam, globulins, etc., almost as valuable and maybe more so than serum albumen in the final analysis.

AJP

The impact of war is felt in more ways than any person could possibly realize. Take for example the very undramatic product milk sugar. Before the war it was available in almost unlimited supply and it was used principally in pharmaceuticals and infant feeding formulas. Then came the war. More mothers were employed so that infant food formulas increased in general use, pharmaceutical needs increased, and use in military flares required considerable amounts. Production of lactose fell at the same time since the demand for whole milk increased and casein whey diminished in supply. Then came penicillin. The need for lactose in growing *Penicillium notatum* was tremendous. In fact this use alone equalled total prewar production. Through the efforts of the War Food Administration and the cooperation of Industry this problem has been practically solved and lactose production is now double its peacetime level. The restrictions on the use of lactose have now been removed.

Pneumonia is no longer the killer that it once was. The death rate in World War I from this disease was 20 per cent as compared with less than 1 per cent in these times. The so-called "miracle drugs" such as the sulfonamides and penicillin are responsible for this change. Pharmacists should take pride in the fact that it is actually the drugs prepared and distributed by them which has been one of the chief factors underlying medical progress.

AJP

The combination of sulfonamides and penicillin has been found much more effective in treating pneumococcic meningitis than either drug when used alone. This combination is also more effective than the sulfonamides combined with antipneumococcic serum.

AJP

In order to bring the Americas closer together in trade relations English study is being encouraged in South America and Spanish in North America. The Pan American Society of Quito-Ecuador, S. A. has announced for free distribution a pamphlet describing a large number of words which are practically identical in both languages and giving to the reader a certain insight of Spanish with little effort. Persons interested in this pamphlet should write to Sociedad Panamericana, Apartado 315 Quito-Ecuador, S. A.

AJP

British medical authorities now agree with American doctors that beneficial results may be obtained in treating cancer of the prostate through the oral administration of diethylstilbestrol. Physicians in both countries have used the drug and have received favorable response.

AJP

"Quick frozen" meats, fruits and vegetables are quite commonplace today, and very desirable in our general economy. It has been suggested that such articles of food be prepared by placing them in planes or balloons and transporting them to the stratosphere, where temperatures are very low. Just how feasible this is may be determined after the war, when available aircraft will be plentiful.

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